

US006410012B1

### (12) United States Patent

Sizemore et al.

(10) Patent No.: US 6,410,012 B1

(45) **Date of Patent:** Jun. 25, 2002

## (54) ANTIMICROBIAL MEDIATED BACTERIAL DNA DELIVERY

# (75) Inventors: **Donata R. Sizemore**, Brentwood, MO (US); **Jerald C. Sadoff**, Washington, DC (US); **Jason C. Grove**, Ashton, MD

(US)

(73) Assignee: The United States of America as represented by the Secretary of the Army, Washington, DC (US)

(\*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

(21) Appl. No.: 09/049,566

(22) Filed: Mar. 27, 1998

#### Related U.S. Application Data

- (60) Provisional application No. 60/042,090, filed on Mar. 28, 1997.
- (51) **Int. Cl.**<sup>7</sup> ..... **A01N 63/00**; A61K 48/00
- (52) **U.S. Cl.** ...... **424/93.2**; 424/93.4; 435/320.1; 435/245; 435/234

#### (56) References Cited

#### U.S. PATENT DOCUMENTS

5,824,538 A	*	10/1998	Branstrom et al 435/252.1
5,877,159 A	*	3/1999	Powell et al 514/44

#### OTHER PUBLICATIONS

Eck & Wilson, 'Gene-Based Therapy' in Goodman & Gilman's The Pharmacological Basis of Therapeutics, McGraw-Hill: New York, Ninth Edition, pp. 77–101.\*

\* cited by examiner

Primary Examiner—Dave T. Nguyen Assistant Examiner—Brian Whiteman (74) Attorney, Agent, or Firm—Elizabeth Arwine; Charles H. Harris

#### (57) ABSTRACT

This invention pertains in part to a method for delivering functional DNA or antigens. The desired DNA is introduced into attenuated bacteria able to enter cells. Once the bacteria is in the cell, antimicrobial agents are introduced such that they enter the mammalian cell and lyse the bacteria thereby allowing the delivery of carried functional DNA or antigens. The advantages of this method and its uses are described.

15 Claims, No Drawings